

Patent Application of
Paul Y. Viriyapanthu
For

TITLE: DEVICE FOR PROTECTING THE FRONT CHIN SPOILER OF AN
AUTOMOBILE

CROSS-REFERENCE TO RELATED APPLICATIONS Not Applicable

FEDERALLY SPONSORED RESEARCH Not Applicable

SEQUENCE LISTING OR PROGRAM Not Applicable

BACKGROUND OF THE INVENION--FIELD OF INVENTION

The present invention relates to protecting the front chin spoiler of an automobile from scraping on a driveway or other inclined driving surface and from damage caused by forward driving into a parking curb.

BACKGROUND OF THE INVENTION

In order to improve aerodynamic flow, and enhance appearance, many automobiles are equipped with front chin spoilers, also referred to as air dams, or front valences. Often these devices are made of fiberglass or plastic, and are usually painted to match the color of the vehicle. The construction of these devices makes them fragile and susceptible to damage from contact with the road surface. The placement of these devices causes the clearance between the chin spoiler to be only a few inches from the surface of the roadway, and a problem often arises when a vehicle

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is driven on a driveway with an inclined surface which causes the lower part of the chin spoiler to scrape against the road surface. The problem is further exacerbated when a vehicle is lowered by the owner or with the use of aftermarket chin spoilers that are often lower to the ground than similar factory installed spoilers.

Similarly, damage to the chin spoiler also often results during the parking of a vehicle where the driver misjudges the distance and drives too far forward, causing the 'face portion' of the chin spoiler, the front vertical surface which channels airflow, to come into contact with the curb or concrete parking blocks demarcating parking spaces.

After a diligent search, applicant has been unable to find any devices designed to protect the chin spoiler of a vehicle from scraping on the surface of the roadway of a driveway or inclined driving surface. There have been devices designed to protect a vehicle from collision with a curb during parking maneuvers. For example D344,035 (1992), a combination curb feeler and alarm, and 393937 (1976) a curb feeler. These designs suffer from a number of disadvantages:

(a) Such devices only alert the driver of the vehicle when an impact with a curb is imminent, but they do not protect against the actual impact itself.

(b) Such devices are only useful for parallel parking circumstances, and not designed to be used in a forward parking spot situation.

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(c) None of the devices protects the underside of a chin spoiler from damage as a result of driveways or other inclined driving surfaces.

BACKGROUND OF INVENTION-OBJECTS AND ADVANTAGES

The objects and advantages of the present invention, the chin spoiler guard, are:

(a) to protect the bottom portion of an automobile's chin spoiler from damage resulting from scraping on driveways or other inclined roadways;

(b) to protect the vertical face portion of the chin spoiler from damage as a result of an impact with a parking curb when the driver pulls too far forward during parking maneuvers.

SUMMARY

The present invention is a device that is attached the underside of a chin spoiler and protects the chin spoiler from damage from contact with the road surface and frontal impact with a parking curb. The device, the chin spoiler guard, is attached to the bottom part of the chin spoiler, on the area directly above and closest to and the road surface. When the vehicle is driven upon a driveway or other inclined road surface, the device is designed to come into contact with the road surface before any contact is made between the road surface and the chin spoiler. The device will bear the brunt of the impact from contact with the road surface and frontal impact with a parking curb, thus protecting the chin spoiler.

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DRAWINGS--FIGURES

Fig 1 shows a 3/4 view of the device showing the two component parts, the bent plate, that comprises the base plate unit, and the sliding unit when fitted together.

Fig 2 shows only the moveable sliding unit of the invention that clamps to the larger base plate unit by use of a threaded screw on the underside (shown). The raised post of the sliding unit clamps against the inside lip of a chin spoiler.

Fig 3 shows a side profile of the device, and fitment to the chin spoiler of an automobile (shown in dashed lines). The vertical post of the base plate unit presses against the outside, lower lip of the chin spoiler. The sliding unit, when fitted to the base unit, is moved so that the protruding post of the sliding unit presses against the interior lip of the automobile's chin spoiler, and is secured by turning the threaded screw on the underside of the sliding unit, preventing movement along the length of the base plate unit. The tension of the base plate unit against the outside of the chin spoiler and the sliding unit against the interior lip of the chin spoiler clamps the device to the chin spoiler.

Fig 4 shows the 3/4 view of the appearance of the device when attached to an automobile (shown in dashed lines).

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Fig 5 shows a side profile of the alternative embodiment of the device with the exterior facing post of the device made at an angle.

Fig 6 shows a side profile of the alternative embodiment of the device lacking the frontal protrusion. This embodiment has fixed vertical posts and the exterior post is set at an angle. In this embodiment, the device is specially manufactured to fit a specific chin spoiler. The angled exterior post is made at the same angle as, and presses against, the exterior surface of the chin spoiler. The interior post is positioned to press against the interior surface edge of the chin spoiler. The device is secured into position by the insertion of a threaded screw into a threaded hole on the interior post of the alternative embodiment. The hole is manufactured at such a height that when a threaded screw is inserted, said screw presses against the uppermost horizontal surface of the interior of the chin spoiler and thus prevents movement of the interior post down and off the chin spoiler.

Fig 7 shows a 3/4 view of the alternative embodiment of the device with fixed vertical posts and the exterior facing post at an angle.

Fig 8 shows a 3/4 view of the appearance of an alternative embodiment of the device when attached to an automobile (shown in dashed lines).

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DRAWINGS--Reference Numerals

| | |
|--|--|
| 10 base plate unit | 12 sliding unit |
| 14 curved protrusion of the base unit which protects from frontal impact | 16 vertical post which presses against the outer surface of the chin spoiler |
| 18 rubber padding on vertical post of base plate | 20 rubber padding on horizontal length of base plate unit |
| 22 raised post which presses against inner surface of chin spoiler | 24 threaded hole |
| 26 readeed hole for screw which clamps sliding unit to base unit | 28 rubber padding on rear vertical post |
| 30 notched protrusion on rubber padding | 32 threaded screw |

DETAILED DESCRIPTION--Figs 1, 2, 3, and 4--PREFERRED EMBODIMENT

A preferred embodiment of the present invention is illustrated in Fig 1 (frontal 3/4 view), Fig 2 (frontal 3/4 view of the sliding unit only), Fig 3 (side view), and Fig 4 (frontal 3/4 view of device when attached to automobile). The base unit **10** consists of a rectangular metal plate with

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a metal protrusion that has been shaped from the plate by bending or forging to form a curve **14** in the shape of a half circle which, at the apex of the half circle, turns into a straight vertical post **16** approximately perpendicular to the horizontal length of the base plate unit in the shape of the letter "D"; the vertical post **18** presses against the outer surface of the chin spoiler, and, in conjunction with the sliding unit, creates tension which clamps the entire invention onto the chin spoiler.

In the preferred embodiment, the base plate unit is made of metal, such as steel or aluminum. Such material may be purchased from U.S. Steel or Alcoa. However, the base unit may be made of any solid, rigid material such as plastic, rubber, vinyl, nylon, various impregnated, laminated or plasticized material.

The dimensions of the base plate unit are approximately 6 to 12 centimeters wide, with the length of approximately 16 centimeters to 40 centimeters. The variations in size are due to the fact that the invention may need to be made in different sizes to accommodate a particular vehicle. The thickness of the material comprising the base unit is approximately 2 to 7 millimeters.

The top of the flat, horizontal surface of the base unit is affixed a sheet of rubber padding **20** which is approximately 2 to 5 millimeters in thickness, and which is attached to the base unit by adhesive. The vertical surface of the base unit **16** has a sheet of rubber padding **18** that is attached to the base unit by adhesive. The

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purpose of the rubber padding is to prevent scratching of the chin spoiler while the invention is attached.

The sliding unit **12** is composed of metal that has been formed by bending and welding, or form molding, to form a rectangular box. The sliding unit fits over the base plate unit and slides across the flat, horizontal length of the base unit. The dimensions of the sliding unit are approximately 3 to 6 centimeters in length, and approximately 1.5 to 3 centimeters in height.

The thickness of the sliding unit is approximately 2 to 5 millimeters in thickness. In the preferred embodiment, the sliding unit is made of metal, such as steel or aluminum, and which may be purchased from U.S. Steel or Alcoa. However, the sliding unit may be made of any solid, rigid material such as plastic, rubber, vinyl, nylon, various impregnated, laminated, or plasticized material.

On one side of the sliding unit, the side facing the chin spoiler, there is a vertical post **24** extending approximately 1 centimeter to 10 centimeters in height, and approximately 2 to 5 millimeters in thickness. This variation in size is necessary given that the invention may need to be made in different sizes to accommodate particular vehicles. The purpose of this post is to press against the interior surface of the chin spoiler, and, in conjunction with the tension from the base unit when the two units are secured together, clamp the entire invention to the chin spoiler.

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On the side of this post closest to, and facing the interior surface of the chin spoiler, is attached by adhesive a sheet of rubber padding **28** approximately 2 to 5 millimeters thick. The purpose of the rubber padding at this point is two fold. First, the padding protects the chin spoiler from scratching from contact with the guard. Secondly, the rubber padding will conform its shape to the interior surface of the chin spoiler, thus providing better grip against the chin spoiler. In addition, the rubber padding has a protruding notch **30** in the area immediately above the edge where the chin spoiler would rest, to prevent vertical movement of the device down and off the chin spoiler.

Through the post **22** and the rubber padding **28** there is a threaded hole **24**. The purpose of this threaded hole is to allow fitment of a threaded screw running the length from the sliding unit to the inside wall of the automobile's chin spoiler. The attachment of this additional screw provides an additional securing point by pressing against the inside surface of the chin spoiler. In addition, the screw will limit the downward vertical movement of the sliding unit and prevents the device from falling off completely should the wall of the sliding unit become dislodged from the interior of the chin spoiler.

FIGS 5-9-Alternative Embodiments

There are various possibilities with regard to varying particular aspects of the invention. The preferred embodiment provides a generally universal fitment of the

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device to nearly all automobiles as the distance between the posts is adjustable. Automobile design and construction may require that the invention be altered in order to fit a particular vehicle, or, in the alternative, the purchaser may prefer a different aesthetic. An alternative embodiment is shown in fig 5 where the vertical portion **16** of the base unit, which comes into contact with the outside surface of the chin spoiler, has been made at an angle. Figs 6, 7, 8, and 9 illustrates an alternative embodiment of the invention which has fixed vertical posts and need not be adjustable. In this embodiment, the measurements of the device are custom manufactured to fit a particular automobile. The alternative embodiment invention does not incorporate the curved portion **14** that protects against frontal impact with a parking curb. The alternative embodiment is mounted similarly to the preferred embodiment by pressing the vertical posts against the exterior and interior surfaces of the chin spoiler. The alternative embodiment has a threaded hole on the interior post, similar to the preferred embodiment, but placed at a lower height such that when a threaded screw is inserted, it presses against the top horizontal surface of the interior of the chin spoiler and secures the device. Fig 9 shows an additional embodiment with the addition of threaded holes on the underside of the horizontal plate that allows for direct bolting to corresponding holes on the chin spoiler.

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Operation—Figs 1, 2, 3, and 4

The manner of using the invention consists of mounting the device to the chin spoiler. The mounting of this device will prevent the chin spoiler from coming into direct contact with the surface of the road. Once securely mounted, no further operation is required of the user.

To mount the invention, the vertical rubber padded section **18** of the post **22** on the base unit base unit is pressed against the outside, lower portion of the chin spoiler and the rubber padded horizontal portion of the base unit **20** is lifted until it is flush against the bottom portion of the chin spoiler. The sliding unit **12** is attached to the base unit **10** and slid towards the chin spoiler until the post and rubber padding of the sliding unit **24** and **28** makes contact with rear surface of the chin spoiler. The base unit and the sliding unit are pressed close together by the user with the chin spoiler in between the two units. Once sufficient tension exists between the rubber padded vertical post **16** and **18** of the base unit and the vertical rubber padded post **24** and **28** of the sliding unit, the sliding unit is clamped securely onto the base unit by turning of the threaded screw **26** on the underside of the sliding unit. Once the sliding unit and the base unit are clamped together, the two units act as one singular clamp, clamping onto the chin spoiler on said chin spoiler's exterior and interior surfaces.

To remove the invention, the threaded screw **26** is loosened, and the sliding unit is moved away from the base

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unit until completely removed. Without the tension of the sliding unit clamping the invention to the chin spoiler, the base unit will fall off.

Advantages

From the description above, a number of advantages of my chin spoiler guard become evident:

(a) With the invention attached, the guard will be lower to the ground than the chin spoiler such that when the automobile is driven on a driveway or other inclined surface, the device will come into contact with the road surface before said chin spoiler and bear the brunt of the impact preventing any damage to the chin spoiler itself.

(b) The outward curved portion of the chin spoiler guard protrudes directly in front of the automobile such that if the vehicle is driven too far forward into a parking curbstone, the damage will be borne by the chin spoiler guard instead of the chin spoiler itself.

(c) The chin spoiler guard can be installed and removed without any permanent modification or damage to the automobile.

(d) The chin spoiler guard is easy for the user to install and remove without any complicated tools necessary.

(e) The chin spoiler guard is inexpensive to replace in event of damage.

Conclusion, Ramifications, and Scope

Accordingly, the reader will see that the chin spoiler guard can be utilized as an inexpensive and practical means by which to prevent costly damage to the chin spoiler of an

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automobile. In addition, without having to be concerned about damage, the owner of the vehicle is given more options in which to customize the vehicle such as by lowering the automobile or by installing more aggressive looking chin spoilers which are often lower to the ground than those which came stock with the vehicle. Furthermore, the chin spoiler guard has the additional advantages in that

- the chin spoiler guard can be painted to increase visibility of the vehicle;
- by nature of the fact that it clamps the chin spoiler, the guard inhibits the chin spoiler from flexing and thus cracking or splitting the paint;
- the guard provides an additional, aggressive look to an automobile.

Although the description above contains many specificities, these should not be construed as limiting the scope of the invention but merely providing illustrations of some of the presently preferred embodiments of this invention. For example, the bent protruding section of the guard, which protects the chin spoiler from frontal collision with a parking curbstone, can be made in different shapes, such as square, rectangle, triangle, trapezoidal, etc.; the portions which require a threaded screw may utilize more than one to secure the device, etc.

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Thus the scope of the invention should be determined by the appended claims and their legal equivalents, rather than by the examples given.